

REMARKS

In the Final Office Action dated 29 December 2005, claims 1-16 were pending and 1-11 and 13-16 were rejected and claim 12 was objected to but considered to include patentable subject matter.

By way of this amendment the features of claim 16 have been incorporated into claim 1 and claim 16 is cancelled. Further, claim 3 is hereby amended to remove multiple dependencies. No new matter is added by way of this amendment. Applicant requests reconsideration and further examination of the application as amended.

In the December 2005 office action claims 1, 3-11, 13-14, and 16 were rejected under 35 USC § 103 (a) as being unpatentable over Trampert in view of Zhu. Further, claims 1, 3-8, 10, 13-14, and 16 are being rejected under 35 USC § 103 (a) as being unpatentable over Trampert in view of Silawongsawat.

The present claim 1 includes the limitation of “estimating a P-SV propagator from said recorded seismic wavefield”. It is submitted that this limitation goes beyond the mere knowledge of a matrix representation of the P-SV propagator. The limitation requires an estimation of the P-SV propagator from the recorded seismic wavefield. The present claim 1 further includes the limitation of “estimating elements of a propagator matrix using spatially independent components of the recorded wavefield and/or ratios of spatially independent components of the recorded wavefield”. The new claim is thus limited to a specific method of deriving the propagator matrix of the P-SV propagator.

Neither Trampert nor Zhu nor Silawongsawat teach a way of estimating a P-SV propagator from a recorded seismic wavefield by estimating elements of a propagator matrix using spatially independent components of the recorded wavefield and/or ratios of spatially independent components of the recorded wavefield.

In the Advisory Action issued 29 March 2006, the argument has been made that since Trampert discloses a method of estimating a P-SH propagator from the wavefield and given

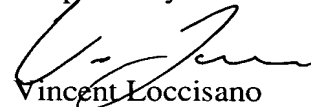
the theoretical knowledge of the P-SV propagator as disclosed for example by Zhu or Silawongsawat, it would be obvious to combine these disclosures to derive an estimate of the P-SV propagator. However, the description and the amended claim 1 clarify that the actual method used by Trampert to estimate the P-SH is different from the method used in the present application. Further, as neither Zhu or Silawongsawat describe ways of actually estimating the P-SV from measured data, and neither Zhu or Silawongsawat teach to estimating elements of a propagator matrix using spatially independent components of the recorded wavefield and/or ratios of spatially independent components of the recorded wavefield.

In summary, the applicants have for the first time presented a method of estimating the P-SV propagator from a measured wavefield using new methods which owe nothing to known methods for P-SH propagators.

In light of the above remarks, Applicants believe that the present application and claims 1-15 as amended are in proper condition for allowance. Such allowance is earnestly requested. If the Examiner is contemplating any action other than allowance of all pending claims, the Examiner is urged to contact Applicant's representative, Jody Lynn DeStefanis at (617) 252-4735 or Vincent Loccisano at (617) 252-4727.

In the event that a fee or refund is due in connection with this Amendment, the Commissioner is hereby authorized to charge any underpayment or credit any overpayment to Deposit Account No 19-0615.

Respectfully submitted,



Vincent Loccisano
Registration No. 55,397

Schlumberger Doll Research Center
36 Old Quarry Road
Ridgefield, CT 06877-4108
Phone: (617) 252-4727
Fax: (203) 431-5640